Patrington
CHURCH OF ENGLAND PRIMARY ACADEMY

Year 1
Computing
Autumn 1
Computer systems and networks: Improving mouse skills

Previous learning

As this is the first unit in Key stage 1, there is no knowledge to recap with the children.

Substantive Knowledge in Computing	**Disciplinary knowledge in Computing**
By the end of KS2, children will know how different technology is used in our lives; they will have developed knowledge of Digital Literacy; they will understand the basic principles of programming and coding and they will know how to stay safe using the internet.	Our Computing curriculum will equip children not only with the skills and knowledge to learn and grow in the digital world we live in, but more importantly in a safe and secure manner. They will be able to apply the British Values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems.

Lesson 1	**Logging in**
	To log in to a computer and access a website. I can recognise what we mean by a computer. I can understand why we need to log in to a computer. I can log in and out of a computer account.
Lesson 2	**Click and drag skills**
	To develop mouse skills. I can navigate a computer using a mouse. I can understand what we mean by 'click' and 'drag'. I can use the fill and stamp tools in Sketchpad.
Lesson 3	**Drawing shapes**
	To use mouse skills to draw and edit shapes. I can click and drag objects to change their size or position. I can use a mouse to carefully position shapes. I can move shapes in front of or behind each other.
Lesson 4	**Drawing a story**
	To draw a scene from a story using digital tools. I can identify the key parts of a story. I can use drag and drop to move and resize images. I can use a variety of tools to create different effects.
Lesson 5	**Self-portrait**
	To create a self-portrait using digital techniques. I can identify different facial features. I can use click and drag to create and layer shapes. I can resize, move and change the order of shapes.

Vocabulary

Log in

Login, Log out / off, Mouse, Mouse pointer, Click, Keyboard, Screen, Password, Account, Software, Duplicate, Ctrl, Tools, Right click, Menu, Layers, Username, Drag, Drag and drop, Digital photograph, Undo,Cursor

Year 1 **Computing** **Autumn 2** **Programming 1: Algorithms unplugged**	
Previous learning	
As this is the first programming unit in Key stage 1, there is no knowledge to recap with the children.	
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Lesson 1	**What is an algorithm?**
	To understand what an algorithm is. I can explain that an algorithm is a set of instructions. I can understand that these instructions sometimes need to be carried out in order. I can understand there can be more than one way to solve a problem.
Lesson 2	**Algorithm pictures**
	To follow instructions precisely to carry out an action. I can explain why an algorithm must be clear and precise. I can explain the problems a robot can have following our instructions.
Lesson 3	**Virtual assistants**
	To understand that computers and devices around us use inputs and outputs. I can identify some input devices. I can identify some output devices. I can identify some devices that are both input and output devices.
Lesson 4	**Step by step**
	To understand and be able to explain what decomposition is. I can explain what decomposition is. I can understand how decomposition allows you to solve a problem more easily. I can explain how we use decomposition in our everyday lives.
Lesson 5	**Debugging directions**
	To know how to debug an algorithm. I can spot bugs in algorithms. I can fix the error (debug it) and explain the problem it caused.
Vocabulary	
Algorithm, Automatic, Bug, Chunks, Clear, Code, Debug, Decompose, Decomposition, Device, Directions, Input, Instructions, Manageable, Motion, Order, Organise, Output, Precise, Programming, Problem, Robot, Sensor, Sequence, Solution, Specific, Steps, Tasks, Virtual assistant	

Year 1
Computing
Spring 1
Skills showcase: Rocket to the moon

Previous learning

Before starting this unit, you might want to check that the children can recall:

What is a computer keyboard used for? (To type.)
How do you log in to school computers? (Type in your username and password in the correct box.)
How do you click and drag? (Place the cursor over it, press and hold down the left mouse button and then move the mouse while still holding down the left mouse button.)
What is clip art? (Pictures that are available to use on the computer.)

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Lesson 1	**Rocket materials**
	To recognise that digital content can be represented in many forms. I can use a computer to create a list. I can identify which materials are best for my rocket and describe their physical properties. I can identify different types of digital content (words and pictures). I can explain how a list made on a computer can be saved and shared more easily.
Lesson 2	**Rocket design**
	To design a rocket using a graphics editing programme. I can open a graphics editing program. I can create a digital image using a graphics editor. I can save my digital image to the correct folder.
Lesson 3	**Rocket building instructions**
	To sequence a set of instructions. I can put a set of instructions in the right order. I can identify the importance of instructions being in the right order. I know how to build a model rocket.
Lesson 4	**Making a rocket**
	To build a rocket. I can build a rocket according to instructions. I can refer to my rocket design. I can take a clear photo of my finished rocket. I can add text to evaluate it.
Lesson 5	**Rocket launching**
	To test a design and record data. I can measure distances accurately. I can record data.

	I can evaluate the success of my design.
Vocabulary	
Annotate, Cells, Components, Create, Data, Debug, Designing, Digital content, Digital image, Document, E-document, Edit, Editing program, Evaluate, Folder, Input, Instructions, Log in, Photo, Program, Order, Robot, Save, Sequence, Share, Software, Spreadsheet, Table	

Year 1
Computing
Spring 2
Programming 2: Beebots

Previous learning

Before starting this unit, you might want to check that the children can recall:

What is an algorithm? (A clear set of instructions.)
What is a 'bug' in a program? (An error or a mistake.)
What is debugging? (Fixing an error.)

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Lesson 1	**Getting to know a virtual device**
	To explore a new device. I can 'tinker' with the buttons of a Bee-Bot to see what they do. I can complete a cycle of predict, test and review.
Lesson 2	**Making a virtual Bee-Bot video**
	To create a demonstration video. I can create a video to explain how to use a Bee-Bot. I can explain what the buttons on a Bee-Bot do. I can show how the Bee-Bot moves when you press the different buttons.
Lesson 3	**Precise instructions**
	To plan and follow a precise set of instructions. I can follow verbal instructions. I can give precise instructions. I can check that the instructions being given are correct.
Lesson 4	**Bee-Bot world virtual**
	To program a device. I can personalise my Bee-Bot world. I can consider how the Bee-Bot model can move from one place to another. I can plan a Bee-Bot route. I can program a Bee-Bot model to follow my planned route.
Lesson 5	**Bee-Bot adventures**

	To create a program that tells a story. I can give the Bee-Bot clear instructions. I can debug my instructions if they go wrong by identifying and correcting the mistake.
Vocabulary	
Algorithm, Artificial intelligence, Bee-Bot, Clear, Code, Debug, Demonstration, Emulator, Filming, Inputting, Instructions, Pause, Precise, Predict, Program, Tinker, Video, Video recording, Virtual	

Year 1 **Computing** **Summer 1** **Creating media: Digital Imagery**	
Previous learning	
Before starting this unit, you might want to check that the children can recall: What is a photograph? (Still images taken by a camera.) How are photographs taken? (On a camera, phone camera.) Can you think of any special photographs that you have at home?	
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Lesson 1	**Planning a photo story**
	To understand and create a sequence of pictures. I can explain what is happening in a pictorial story. I can recognise the importance of sequencing. I can plan my own pictorial story. I know that sequencing is important in Computing.
Lesson 2	**Taking photos**
	To take clear photos. I can get down to the level of my character. I can look at the screen and check what is in frame. I can press the button carefully to ensure nothing changes. I can ensure that my surroundings are bright enough. I can identify that moving can create a blurred image.
Lesson 3	**Editing photos**
	To edit photos. I can explain that photos can be changed after they have been taken. I can identify ways to improve my photo. I can crop, resize and add a colour filter to my photo.
Lesson 4	**Searching for images**
	To search for and import images. I know images can be found online.

	I can think of a keyword to search with. I know what to do if I find something uncomfortable.
Lesson 5	**Photo collage**
	To create a photo collage. I can download the photos I want. I can organise them on to the page. I can resize and change the orientation of my images. I can add numbers to show their order.
Vocabulary	
Background, Blurred, Camera, Clear, Crop, Delete, Device, Digital camera, Download, Drag and drop, Edit, Editing software, Filter, Image, Import, Internet, Keyword, Online, Photograph, Resize, Save as, Screen, Search engine, Sequence, Software, Storage space, Visual effects	

Year 1 **Computing** **Summer 2** **Data handling: Introduction to data**	
Previous learning	
Before starting this unit, you might want to check that the children can recall: A pictogram uses pictures to represent information. A branching database uses yes and no questions to find an answer. Sorting objects into categories makes it easier to locate information.	
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Lesson 1	**Zoo data**
	To represent data in different ways. I know that data can be shown in different ways. I can represent data in different ways. I can answer questions about the data using my representation.
Lesson 2	**Picture data**
	To use technology to represent data. I can use a mouse. I can type using a keyboard. I can create a pictogram that shows animal data.
Lesson 3	**Minibeast hunt**
	To collect and record data. I can identify different minibeasts. I can record the number of different minibeasts I see. I can represent this data digitally.

Lesson 4	**Animal branching databases**
	To sort data. I can identify and categorise different animals. I can identify questions to sort data in the most efficient way. I can create a branching database.
Lesson 5	**Inventions**
	To design an invention to gather data. I recognise that computers understand different types of input. I can design a computerised invention to gather data. I can explain how my invention works.
Vocabulary	
Bar chart, Block graph, Branching database, Categorise, Chart, Click and drag, Compare, Count, Data, Data collection, Data record, Data representation, Edit, Input, Keyboard, Line graph, Mouse, Information, Label, Pictogram, Pie chart, Process, Record, Resize, Sort, Table, Tally, Values	